

PCT/IB00/00934

10/018322

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING  
OF A CHANGE

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

To:

PIGASSE, Daniel  
Pechiney  
217, cours Lafayette  
F-69451 Lyon Cedex 06  
FRANCE

Date of mailing (day/month/year) 31 January 2002 (31.01.02)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference BR 3317/DP/FM	
International application No. PCT/IB00/00934	International filing date (day/month/year) 06 June 2000 (06.06.00)

1. The following indications appeared on record concerning: <input checked="" type="checkbox"/> the applicant <input checked="" type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative		
Name and Address TOURNIER, Sandrine 5, rue Louis Drevet F-38000 Grenoble France	State of Nationality FR	State of Residence FR
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning: <input type="checkbox"/> the person <input type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence		
Name and Address TOURNIER, Sandrine 50, rue Jean Pain F-38600 Fontaine France	State of Nationality FR	State of Residence FR
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	
3. Further observations, if necessary:		
4. A copy of this notification has been sent to: <input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the designated Offices concerned <input type="checkbox"/> the International Searching Authority <input checked="" type="checkbox"/> the elected Offices concerned <input type="checkbox"/> the International Preliminary Examining Authority <input type="checkbox"/> other:		

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer François BAECHLER Telephone No.: (41-22) 338.83.38
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## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing: 21 December 2000 (21.12.00)	
International application No.: PCT/IB00/00934	Applicant's or agent's file reference: BR 3317/DP/FM
International filing date: 06 June 2000 (06.06.00)	Priority date: 11 June 1999 (11.06.99)
Applicant: TOURNIER, Sandrine et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International preliminary Examining Authority on:

10 November 2000 (10.11.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer:  J. Zahra Telephone No.: (41-22) 338.83.38
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REC'D 03 AUG 2001

WIPO

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference BR 3317/DP/FM	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB00/00934	International filing date (day/month/year) 06/06/2000	Priority date (day/month/year) 11/06/1999
International Patent Classification (IPC) or national classification and IPC B32B27/08		
Applicant CEBAL SA et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  10/11/2000	Date of completion of this report  31.07.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Hindia, E  Telephone No. +49 89 2399 8492



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB00/00934

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, pages:

1-16 as originally filed

2a as received on 07/05/2001 with letter of 04/05/2001

### Claims, No.:

1-17 as received on 07/05/2001 with letter of 04/05/2001

### Drawings, sheets:

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB00/00934

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims	
	No:	Claims	1-17
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-17
Industrial applicability (IA)	Yes:	Claims	1-17
	No:	Claims	

2. Citations and explanations  
**see separate sheet**

## VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/IB00/00934

**Item V**

Reasoned statement under Article 35(2) PCT with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. The following documents from the International Search Report have been considered for the purposes of this report:

D1 = US-A-3576707

D3 = US-A-4874568

2. **Novelty**

Present claim 1 does not comply with the requirements of Article 33(2) PCT for the following reasons:

The feature "wherein the first thermoplastic material forms a barrier against oxygen" used in claim 1 to specify the material in the multilayer film is not a structural feature thereof but describes the final result achieved therewith and merely amounts to a statement of the underlying problem, i.e., to provide a multilayered film comprising a layer capable of being a barrier material. The feature has therefore no limiting effect on the thermoplastic material and when examining novelty of the subject-matter of claim 1 this feature has not been taken into account, since it is not suitable to delimit the thermoplastic material from the prior art. The feature "microlayer of a first thermoplastic material" in claim 1 has been interpreted as comprising any layer of a thermoplastic material, since the term "micro" has no limiting effect on the said layer. The multilayer film has been interpreted as being characterized by the structural features of a) comprising a stack of recurring units each comprising a layer of a thermoplastic material selected from the group of polymers specified in claim 1 and b) the film having a thickness of between 10 and 2500  $\mu\text{m}$ .

D1 and D3 both disclose a multilayered film comprising a layer of a thermoplastic material and having the film thickness as specified in claim 1 when interpreted as indicated above (see in D1, claims 1 to 4, column 12, lines 40 to 58 and column 13, line 47 to column 14, line 36; D3, claims 1 to 4, example 1 and column 3, line

58 to column 4, line 10). The teaching of D1 and D3 is therefore novelty-destroying for the subject-matter of present claim 1. For the reasons indicated above it is pointed out, that apart from the films in D1 and D3 any prior art multilayered film comprising a stack of recurring units each comprising a layer of a thermoplastic material selected from the group of polymers in claim 1 and the film having a thickness of between 10 and 2500  $\mu\text{m}$  would also deprive claim 1 of novelty.

The subject-matter of dependent claims 2 to 16 is also known from D1 and D3 for the reasons put forward against claim 1 above. The subject-matter of claim 17 is also known from D3 (see in particular column 3, line 20 to column 4, line 16 in D3).

### 3. Inventive Step

Present claims 1 to 17 do not comply with the requirements of Article 33(3) PCT for the following reasons:

The problem addressed by the present application is to provide a multilayered film constructed of extruded layers capable of being a barrier to gases and vapour. The problem has been solved by the film defined in claims 1 to 17. In view of the teaching of D1 relating to multilayered films having improved gas **barrier** properties (see in D1, column 12, lines 55 to 58), the subject-matter of claims 1 to 16 is both not novel and does not involve an inventive step. The subject-matter of claim 17, does not appear to involve an inventive step, as there are no experimental data reported in the present application demonstrating the attainment of an unexpected effect or advantage attributable to the crystallinity of the thermoplastic material defined in present claim 17 in view of the teaching of D1, which would enable an inventive step to be acknowledged and thus it appears that the subject-matter of claim 17 does not contribute to the solution of the problem posed in the application.

### 4. Present claims 1 to 17 comply with the requirements of Article 33(4) PCT (industrial applicability).

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/IB00/00934

**Item VI**

Certain published documents (Rule 70.10 PCT)

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
WO-A-99/33654 (D4)	08.07.1999	30.12.1998	31.12.1997 28.12.1998
WO-A-00/15067 (D5)	23.03.2000	10.09.1999	11.09.1998

D4 and D5 might become relevant in the national/regional phase of the procedure, since both disclose a multilayer film as defined in present claim 1 when interpreted as indicated in section 2. above.



**CLAIMS****1. A multilayer film comprising:**

a stack of recurring units wherein each recurring unit has at least one extruded microlayer of a first thermoplastic material and further wherein the first thermoplastic material forms a barrier against oxygen wherein the film has a total thickness of between 10 and 2 500  $\mu\text{m}$ .

2. The film of Claim 1 wherein the first thermoplastic material forms a barrier against water vapor.

3. The film of Claim 1 wherein the plurality of recurring units includes a second thermoplastic material.

4. The film of Claim 3 wherein the first thermoplastic material forms a first microlayer and the second thermoplastic material forms a second microlayer wherein the first and second microlayers are coextruded and form the recurring units within the stack.

5. The film of Claim 3 wherein the plurality of recurring units includes a third material wherein the first thermoplastic material forms a first microlayer, the second thermoplastic material forms a second microlayer and the third thermoplastic material forms a third microlayer wherein each unit consists of each of the first, second and third microlayers.

6. The film of Claims 4 or 5 wherein at least one of the thermoplastic materials is selected from the group consisting of polyamide, polyethylene and polypropylene.

**7. The film of Claims 4 or 5 further comprising:**

at least one adhesive microlayer between the first and second microlayers in each recurring unit wherein the adhesive microlayer bonds the first microlayer to the second microlayer.

8. The film of Claim 5 further comprising:

a first adhesive microlayer between the first and second microlayers in each recurring unit wherein the adhesive microlayer bonds the first microlayer to the second microlayer; and

5 a second adhesive microlayer between the second and third microlayers in each recurring unit wherein the second adhesive microlayer bonds the second microlayer to the third microlayer.

9. The film of Claim 3 wherein each recurring unit includes at least one microlayer  
10 formed from a mixture of the first and second thermoplastic materials.

10. The film of any of Claims 1-9 further comprising:

an external layer disposed on a surface of the stack of microlayers.

15 11. The film of Claim 10 wherein the external layer is selected from the group consisting of polyamide, polyethylene and polypropylene.

12. The film of Claim 10 further comprising:

20 an external adhesive layer disposed between the external layer and the stack of microlayers wherein the external adhesive layer bonds the external layer to the stack of microlayers.

25 13. The film of Claim 1 wherein the barrier against oxygen is selected from the group consisting of ethylene vinyl alcohol, polyketones, polyamides, polyvinylidene chlorides

14. The material of Claim 2 wherein the barrier against water vapor is selected from the group consisting of polyethylene, polypropylene, thermoplastic polyester, polyvinyl chloride, polyvinylidene chloride and polyethylene terephthalate.

30 15. The film of Claims 7 or 8 wherein the adhesive microlayers are partially soluble at the same time to the microlayers surrounding the adhesive microlayers.

16. The film of Claims 3 or 9 wherein the first and second thermoplastic materials are selected from the group consisting of polyamide and ethylene-vinyl alcohol copolymer.

- 5 17. A method of manufacturing a film having a plurality of microlayers, the method comprising the steps of:

extruding a plurality of microlayers to form a stack of recurring units wherein each unit includes at least one microlayer;

cooling the multilayer film to achieve at least a 50% crystallinity of the barrier film;

10 and

bonding an external layer to the stack.

# TENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>BR 3317/DP/FM</b>	<b>FOR FURTHER ACTION</b>		see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. <b>PCT/IB 00/ 00934</b>	International filing date (day/month/year) <b>06/06/2000</b>	(Earliest) Priority Date (day/month/year) <b>11/06/1999</b>	
Applicant  <b>CEBAL SA</b>			

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 00/00934

## Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

A multilayer film comprising:  
a stack of recurring units wherein each recurring unit has at least one extruded microlayer of a first thermoplastic material and further wherein the first thermoplastic material forms a barrier against oxygen wherein the film has a total thickness of between 10 and 2500  $\mu\text{m}$ .  
If more than one microlayer is contained within each unit, then the microlayers may be coextruded together. Specifically, the barrier microlayer may be selected from among EVOH, polyketones, PA6, MXD6, PVDC, LCP, polyvinyl alcohol ("PVOH") or any other like barrier material against oxygen.

## INTERNATIONAL SEARCH REPORT

International Application No

IB 00/00934

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 B32B27/08 B29C47/70

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B32B B29C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	WO 99 33654 A (KIMBERLY CLARK CO) 8 July 1999 (1999-07-08)  claims 1-7, 20-31, 38, 39 page 8, line 19 - page 10, line 36 page 25	1-4, 6-8, 10, 11, 13, 14
P, X	WO 00 15067 A (BONK HENRY W ; MITCHELL PAUL H (US); NIKE INC (US); GOLDWASSER DAVI) 23 March 2000 (2000-03-23) claims  -/-	1-4, 6, 13, 14

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

28 September 2000

Date of mailing of the international search report

11/10/2000

Name and mailing address of the ISA

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Authorized officer

Ibarrola Torres, O

## INTERNATIONAL SEARCH REPORT

International Application No.

IB 00/00934

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 576 707 A (SCHRENK WALTER J ET AL) 27 April 1971 (1971-04-27) column 1, line 16 -column 6, line 56 column 12, line 32 - line 58 column 13, line 47 -column 14, line 36 column 16, line 25 - line 26	1-4,6,7, 13,14
A	---	17
X	US 5 269 995 A (RAMANATHAN RAVI ET AL) 14 December 1993 (1993-12-14) claims 1-5 column 2, line 47 -column 5, line 29	1,2,4,5, 10,14
A	---	17
X	US 4 874 568 A (CHAU C C ET AL) 17 October 1989 (1989-10-17) claims; figures column 3, line 58 -column 4, line 39	1-4,9
A	-----	5,13,14, 17

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

IB 00/00934

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9933654	A	08-07-1999	US 6071450 A	06-06-2000
			US 6117438 A	12-09-2000
			AU 1947999 A	19-07-1999
			AU 1948099 A	19-07-1999
			AU 2017699 A	19-07-1999
			WO 9933651 A	08-07-1999
			WO 9933655 A	08-07-1999
			AU 2096899 A	19-07-1999
			EP 1037743 A	27-09-2000
			WO 9933656 A	08-07-1999
WO 0015067	A	23-03-2000	US 6082025 A	04-07-2000
			AU 5918299 A	03-04-2000
US 3576707	A	27-04-1971	US 3801429 A	02-04-1974
US 5269995	A	14-12-1993	AU 5102693 A	26-04-1994
			CA 2146011 A	14-04-1994
			DE 69328257 D	04-05-2000
			EP 0663867 A	26-07-1995
			JP 8501994 T	05-03-1996
			WO 9407677 A	14-04-1994
US 4874568	A	17-10-1989	NONE	